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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,224	08/22/2006	Dzevdet Burazerovic	NL 040196	1473
24737 7590 03/09/2011 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
MUNG, ON S				
ART UNIT		PAPER NUMBER		
2483				
NOTIFICATION DATE		DELIVERY MODE		
03/09/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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**Office Action Summary****Application No.**

10/598,224

**Applicant(s)**

BURAZEROVIC, DZEVDET

**Examiner**

ON MUNG

**Art Unit**

4163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on August 22, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/22/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 05/29/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 22 May 2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been placed of record in the file.

### ***Claim Objections***

3. Claims 2-11 are objected to because of the following informalities: In claims 2-11 line 1, "a video encoder" seems to refer back to "a video encoder" recited at claim 1 line 1. Similarly, in claim 6 line 1, "a video encoder" seems to refer back to "a video encoder" recited at claim 5 line 1. If this is true, it is suggested applicant to change "a video encoder" to ---- the video encoder-----.

4. In claim 7 line 1, "a plurality of reference blocks" seems to refer back to "a plurality of reference blocks" recited at claim 1 line 3. If this is true, it is suggested applicant to change "a plurality of reference blocks" to ----- the plurality of reference blocks-----.

### ***Drawings***

5. The drawings are objected to because the boxes in the flow diagrams shown in Figure 1 are not labeled, but are simply empty boxes. These are insufficient by

themselves to give public notice to what an applicant regards as the invention.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because the filed abstract document contains reference numbers referring to the drawing which should be removed.

Correction is required. See MPEP § 608.01(b).

7. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.

- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Applicant should provide the proper section headings.

### ***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 13 and 14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 13 recites a "computer program" *per se* embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – *Guidelines* Annex IV). That is, the scope of the presently claimed computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

Claim 14 recites a "record carrier comprising a computer program". The word "comprising" is insufficient to tie the structure of the physical carrier to the abstract program. Alternatively, a "carrier" can reasonably be construed as a non-statutory

signal *per se*, ineligible for patentability. *Nuijten*, 550 F.3d at 1356–57. Since it does not appear that the “carrier” is defined or limited in the specification, it is to be interpreted as broadly as reasonably possible.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 5-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shen et al. (US2005/0008232A1)**, hereinafter Shen in view of **Wang et al. (“Face detection using DCT Coefficients in MPEG Video”, In Processings of International Workshop on Advanced Image Technology, 2002.)**, hereinafter Wang.

**Remark:** Claim 1 has properly invoked 35 U.S.C. 112 6<sup>th</sup> Paragraph.

**Regarding claim 1**, Shen discloses video encoder (e.g. **Fig. 16 & 17: Image predictive coding apparatus**) comprising:

means (**1012;1026**) for generating a first image block (101) (e.g. **an input sampling unit**) from an image to be encoded. [**See Fig. 16 and 17; paragraph 0374 line 1-2, 0378 line 6-7**]

means (**1017; 1031**) for generating a plurality of reference blocks (111) (e.g. **reference numeral 1018**) [**See Fig. 16 and 17; paragraph 0375 line 1-4, 0379 line 1-3**] ;

means **(1014;1028)** for generating a transformed image block (115) **(e.g DCT transform unit)** by applying an associative image transform to the first image block **[See Fig. 16 and 17; paragraph 1-8];**

means **(1017;1031)** for generating a plurality of transformed reference blocks (113) **(e.g. DCT domain prediction: the DCT transform domain prediction is executed in a unit 1071 and 1031, while the reference numeral 1018 denotes a block memory for storing previously decoded for prediction)** by applying the associative image transform to each of the plurality of reference blocks **[See Fig. 16 and 17; paragraph 0375 line 1-4, 0379 line 1-3];**

means **(1041)** for generating a plurality of residual image blocks (119) **(e.g. the unit 1041)** by determining a difference between the transformed image block and each of the plurality of transformed reference blocks **[See Fig. 18; paragraph 0383: subtract current block from previous adjacent DCT block to calculate difference between DCT coefficients];**

means **(1049; 1050)** for selecting a selected reference block (105) **(e.g. the unit 1049 and 1050)** of the plurality of reference blocks in response to the plurality of residual image blocks **[See Fig. 18; paragraph 0391];**

means **(1016; 1020; 1029; 1030; 1034)** for encoding (103, 107) **(e.g. Variable Length Coding; entropy coding(VLC))** the first image block in response to the selected reference block **[See Fig. 16 and 17; paragraph 0375 and 0379].**



Shen does not disclose means for performing analysis (117) of the image in response to data of the transformed image block. However, Wang from the same or similar fields of endeavor teaches performing image analysis on face detection using DCT coefficient in MPEG video, in response to the data of the transformed image block **[See abstract; Fig. 1; Section 2.2.1]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Shen to add means for performing analysis of the image in encoder, as taught by Wang in order to develop the video coding standard in the encoding process.

**Regarding claim 5**, Shen discloses all the subject matter of the claimed invention with the exception of the video encoder, wherein the means for performing analysis of the image (117) is operable to perform content analysis of the image in response to data of the transformed image block. However, Wang from the same or similar fields of endeavor teaches the face detection content analysis is performed in response to data of the image block of DCT image transform **[See Section 2.2]**. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Shen to add means for performing content analysis of the image in encoder, as taught by Wang in order to develop the video coding standard in the encoding process.

**Regarding claim 6**, Shen fails to disclose the video encoder, wherein the means for performing analysis (117) of the image is operable to perform content analysis of the image in response to a DC (Direct Current) parameter of the transformed image block. However, Wang discloses the content analysis of the image in response to a DC (Direct

Current) parameter (e.g. DC values) of the transformed image block [See Section 2.2.1 paragraph 2 line 13-16]. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Shen to add means for performing analysis of image in response to a DC (Direct Current) parameter of the transformed image block in encoder, as taught by Wang in order to develop the video coding standard in the encoding process.

**Regarding claim 7**, Shen discloses the video encoder, wherein means (1017; 1031) for generating a plurality of reference blocks (111) (e.g. reference numeral 1018) is operable to generate the reference blocks in response to data values of only the image [See paragraph 009, 0013, and 0383: coding image data of moving images is comprised of intra-frame that only uses current image without using prediction from other images or frames].

**Regarding claims 8 and 9**, Shen does not disclose the video encoder, wherein the first image block comprises luminance data and 4 by 4 luminance data matrix. However, Wang teaches that the first image block consists of luminance (Y) data and a 4 by 4 luminance data matrix [See Fig. 1; section 2.2.1 paragraph 1]. It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Shen to add luminance data and 4 by 4 luminance data matrix in encoder, as taught by Wang in order to develop the video coding standard in the encoding process.

**Regarding claim 10**, Shen discloses the video encoder, wherein the means (1016; 1020; 1029; 1030; 1034) for encoding (103, 107) (e.g. **Variable Length Coding; entropy coding(VLC)**) comprises determining a difference block (e.g. **a unit 1031**) between the first image block and the selected reference block and means for transforming the difference block (e.g. **unit 1028**) using a non-associative transform (See Fig. 17).

**Regarding claim 12**, it contains the limitation of claims 1 and is analyzed as previously discussed with respect to that claim.

**Regarding claim 13 and 14**, Shen discloses a recording medium in which a computer program including the steps of encoding method, thus implying that the H.264 codec is implemented as a program on a carrier (e.g. transmitting the data through communication line), as claimed. [See paragraph 0001, 0268, and 0534].

11. Claims 2-4, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shen et al. (US2005/0008232A1)**, hereinafter Shen in view of **Zhou (US2003/0093452A1)**.

**Regarding claims 2 and 3**, Shen discloses all the subject matter of invention except a video encoder, wherein the associative transform is a linear transform or Hadamard transform. However, Zhou teaches that DCT transform is replaced by Hadamard transform using the symmetric 4 by 4 matrix in transforming process [See paragraph 0065 and 0066: **the Hadarmard transform performs linear operation and it is well known in the art**]. In addition, the present invention describes a

**linear transform is particularly a Hadamard transform (see paragraph 0069 of Shen), and the Hadamard transform is a linear transform (see paragraph 0081 of Shen). Therefore, it is understandable that the inventor uses Hadamard transform to perform linear operation and other transform processes for present invention.**

It would have been obvious to the person of ordinary skill in the art at the time of the invention to modify the system disclosed by Shen to use Hadamard transform in encoder, as taught by Zhou in order to provide low complexity and less computation for generating transform in the encoding process.

**Regarding claim 4**, Zhou discloses video encoder, wherein the associative transform (**Hadamard transform**) is such that a data point of a transformed image block has a predetermined relationship with an average value of data points of a corresponding non-transformed image block [**See paragraph 0065 and 0066: The DC coefficients correspond to average data points of the image block and by using a transform that generate a data point which correspond to this values**].

**Regarding claim 11**, Zhou describes a video encoder, wherein the video encoder is an H.264 video encoder (**See paragraph 004 and 005**), which is a subset of H.264/AVC video.

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please take note of Ueda et al (Patent number 5815602) and Koide (US7079696B2) for their similar coding system.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ON MUNG whose telephone number is (571)270-7557. The examiner can normally be reached on Monday - Friday; 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 5712723171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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